



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,723	01/29/2001	Peter G. Webb	10010016-1	1312
7590	01/12/2005		EXAMINER	
AGILENT TECHNOLOGIES Legal Department, 51U-PD Intellectual Property Administration P.O. Box 58043 Santa Clara, CA 95052-8043			SMITH, CAROLYN L	
			ART UNIT	PAPER NUMBER
			1631	
DATE MAILED: 01/12/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application N.</b>	<b>Applicant(s)</b>	
	09/772,723	WEBB, PETER G.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Carolyn L Smith	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 25 October 2004.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-14 and 45-52 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-14 and 45-52 is/are rejected.

7)  Claim(s) 47, 48, 51, 52 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date .

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_ .

**DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission, filed 10/25/04, has been entered.

Amended claims 1 and 8 and new claims 45-52, filed 10/25/04, are acknowledged.

Claims herein under examination are 1-14 and 45-52.

***Claim Objections***

Claims 47, 48, 51, and 52 are objected to because of the following informalities: These claims recite the phrase "said said" which appears to be redundant. Appropriate correction is required. This objection is necessitated by amendment.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 47 and 51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 47 and 51 recite the phrase “tray number, column number, row number” which is vague and indefinite. It is unclear if all three numbers must be present or if only one must be present or if only two must be present. Insertion of the word “and” or “or” after the last comma would clarify this issue. Correction of this issue is requested via clearer claim wording.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The rejection of claims 1-14 and 45-52 is necessitated by amendment under 35 U.S.C. 103(a) as being unpatentable over Hunkapiller et al (P/N 5,942,609), in view of Zeleny et al. (P/N 6,215,894), Brown et al. (P/N 5,807,522), Anderson (P/N 6,456,942), Shakib et al. (P/N 5,812,793), and Balaban et al. (P/N 6,229,911).

This rejection is necessitated by amendment.

Hunkapiller et al. describe creating arrays with addressable locations where multiple biopolymer samples can be fixed or mounted in fixed locations (col. 18, lines 11-21). Hunkapiller et al. describe liquid reagents being delivered from vessels to solid supports (col. 5, lines 10-12) which include addressable arrays (col. 9, lines 18-21), which represents obtainment from a plurality of individual vessels. Hunkapiller et al. describe assembly of a polynucleotide, including DNA, on a solid support (abstract and col. 6, lines 56-59). Hunkapiller et al. describe

using solid supports having rigid or semi-rigid character as well as an array of physically separate regions on the support with wells (col. 8, line 64 to col. 9, line 7), which represents a format of a tray with multiple wells, as stated in instant claims 45 and 49. Hunkapiller et al. do not describe saving in a memory a map of the identity of the vessels corresponding to substrate regions where the biopolymers are deposited, applying the map identifier to the substrate or housing carrying the substrate, or shipping the fabricated array with applied map identifier to a remote location. Hunkapiller et al. do not teach the method of generating the array at a central fabrication station and making associated map identifiers that are communicated to physically remote stations and from the central fabrication station. Hunkapiller et al. also do not teach the communication of the information via network (i.e., LAN (Local Area Network), WAN (Wide Area Network), e-mail, etc.) or computer readable storage media.

Zeleny et al. describe an identifier corresponding to each experiment imprinted on the biochip (col. 2, lines 13-14) which represents a portable storage medium. Zeleny et al. describe the identifier is machine-readable which is imprinted on the chip prior to deposition of the array experiment (col. 2, lines 18-20). Zeleny et al. describe a file is opened on a computer system where the operator may enter various parameters of the experimental array including a map of the reagents deposited in the array (col. 2, lines 20-25) which represents a map of the individual identity of substances. Zeleny et al. describe a computer-stored record corresponding to each identifier (abstract) which is reasonably interpreted as a database. Figure 1 shows multiple wells of an array that are arranged in rows and columns, as stated in instant claims 46 and 50. Figure 1 shows numerical identifiers in which some of the digits identify experimental parameters, source of the array, and the array itself (tray number) (col. 3, lines 8-18), as stated in instant

claims 47 and 51. Figure 2 further explains Figure 1 in greater detail with individually identified control spots (22) and array experiment spots (20) which represent identity of specific column and row numbers.

Brown et al. describe mass fabrication of microarrays (col. 2, lines 20-25) and shipment of DNA reagents via microarrays to researchers (col. 14, lines 36-42).

Balaban et al. teach that portable storage media may be used to carry information between computers (col. 6, lines 16-18).

Anderson describes a server that designs a set of probes to capture target sequences requested by a user, a synthesizer (fabrication station) that builds the probes on the surface of an array, and a chip that is shipped to a user (col. 2, lines 57-62). Anderson describes methods for interfacing computer technology via a network in a remote manner with biological and chemical processing and synthesis equipment (col. 1, lines 37-54). Anderson describes controlling and/or monitoring equipment for synthesizing or processing biological or chemical materials from a remote location (col. 2, lines 1-4). Anderson describes a remote location is linked via the Internet to an internal server or intranet (col. 2, lines 53-57). Anderson describes a display of the information about the chip in Figure 4 (col. 3, second paragraph). The figure on the front page of the Anderson patent displays arrows in a cyclical manner (continuous) which represents that this process may occur multiple times with the “array synthesis equipment” representing a central fabrication station.

Shakib et al. teach an asynchronous store and forward data replication system and the method utilizing existing computer networks and/or network control software as a transport agent to deliver the communication messages (abstract). Shakib et al. teach a system and method

which can generate information from a remote station (i.e., creation of new data, modification of existing data, or deletion of existing data) (col. 3, lines 20-28), and communicate to another remote station over foreign networks such as the Internet or other Wide Area Network (WAN) (col. 5, lines 28-32). Shakib et al. teach the assignment of all data sets and individual objects which make up the data sets with unique IDs, allowing them to be tracked throughout the network (col. 4, lines 39-46) which represents the individual identity of individual objects via identifiers relative to a reference mark, as stated in instant claims 48 and 52. Furthermore, Shakib et al. teach the access of privileged information via use of IDs of the data set (col. 4, lines 50-57).

Zeleny et al. state that analysis of raw data from a biochip array collected by a scanner was previously performed manually which involved significant operator time as well as errors in the scanning and analysis procedure (col. 2, lines 4-10). One of ordinary skill in the art would have been motivated to automate microarray biochip experiments, as stated by Zeleny et al. (col. 1, lines 5-9). Therefore, it would have been obvious to add automated techniques, beginning with automated delivery of liquid reagents from vessels to the array (as stated by Hunkapiller et al. (col. 5, lines 7-11), using barcode identifiers and mapping reagent location as stated by Zeleny et al. in order to avoid unnecessary errors and speed efficiency, as stated by Zeleny (col. 2, lines 4-10). Shakib et al. teach the ability of data or data sets (i.e., information) transfer from a remote station, such to another remote station and the ability to generate unique identifiers to track down and access the data or data sets. The ability to communicate, access, or exchange data through network, such as e-mail, WAN, LAN, the Internet, etc., would be advantageous since it would allow communication of any information (even an array design) between

physically separate individuals, companies, or entities, quickly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shakib et al. as well as the distribution of microarrays (as stated by Brown et al.), array shipment and evaluated by user (stated by Anderson, col. 2, lines 61-67) and portable storage media use (as stated by Balaban et al.) to the above teachings to expedite the data transfer/access, or more specifically, array designs and any pertaining information thereof, to the array generation scheme, and thus avoiding wasted use of operator time and errors as previously stated by Zeleny et al.

Thus, claims 1-14 are obvious over the cited references.

Applicant states the amended claims specify that a map of the source vessels themselves, not just the identity of the biopolymers obtained from the source vessels, is associated with the manufactured array in the subject methods. Applicant further states that the identity of the vessels is the specifics of the actual vessel itself, not just the contents thereof. These statements are found unpersuasive as the claim wording is such that it can be interpreted broadly and reasonably to include identification via the contents thereof. This particular interpretation is not excluded from the broad limitation amended into the instant claims 1 and 8. Also, it is noted that the individual identification need not be different identities, they only need to be separate identities. According to the Merriam-Webster online dictionary, the term individual is defined as “of, relating to, or distinctively associated with an individual”. Parameters describing the reagents in the vessel represent an individual identification of the vessel, much like strawberry

jam alone sufficiently represents the individual identification of a vessel or jar of strawberry jam due to their association.

Applicant states there is no teaching or suggestion in the combination of references to generate a map of source vessels per se and associate it with the manufactured array. This statement is found unpersuasive as the references clearly suggest a map of source vessels via the unique identifiers and contents of the vessels themselves. Applicant states the Zeleny reference does not address this limitation as it is concerned with recording an identifier on the array that can be used to retrieve appropriate scanning protocol to use in reading an array. This statement is found unpersuasive as a combination of the prior art references taken together is what addresses the instant invention, and not a single reference. Because all of the limitations are addressed and a proper motivational statement to combine references was presented, the 35 USC 103(a) rejection is deemed proper.

### ***Conclusion***

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center. The faxing of such papers must conform to the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)

(See 37 CFR §1.6(d)). The Central Fax Center number for official correspondence is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn Smith, whose telephone number is (571) 272-0721. The examiner can normally be reached Monday through Thursday from 8 A.M. to 6:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached on (571) 272-0722.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instruments Examiner Tina Plunkett whose telephone number is (571) 272-0549.

January 4, 2005

*Ardin H. Marschel* 1/7/05  
ARDIN H. MARSCHEL  
PRIMARY EXAMINER